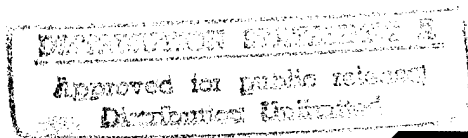


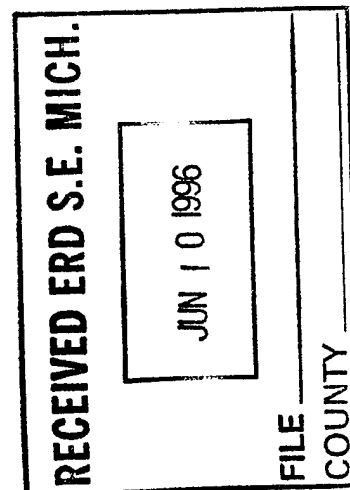
INSTALLATION RESTORATION PROGRAM

FINAL INSTALLATION RESTORATION PROGRAM DECISION DOCUMENT - SITE 14

ALPENA COMBAT READINESS TRAINING CENTER
MICHIGAN AIR NATIONAL GUARD
ALPENA COUNTY REGIONAL AIRPORT
ALPENA, MICHIGAN



MAY 1996



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HAZARDOUS WASTE REMEDIAL ACTIONS PROGRAM
Environmental Restoration and Waste Management Programs
Oak Ridge, Tennessee 37831-7606
managed by LOCKHEED MARTIN ENERGY SYSTEMS, INC.
for the U.S. DEPARTMENT OF ENERGY under contract DE-AC05-84OR21400

FINAL

INSTALLATION RESTORATION PROGRAM
DECISION DOCUMENT - SITE 14

ALPENA COMBAT READINESS TRAINING CENTER
MICHIGAN AIR NATIONAL GUARD
ALPENA COUNTY REGIONAL AIRPORT
ALPENA, MICHIGAN

Submitted to:

AIR NATIONAL GUARD READINESS CENTER
ANDREWS AFB, MARYLAND

Submitted by:

HAZARDOUS WASTE REMEDIAL ACTIONS PROGRAM
LOCKHEED MARTIN ENERGY SYSTEMS, INC.
Oak Ridge, Tennessee 37831

for the:

U.S. DEPARTMENT OF ENERGY

Prepared by:

EARTH TECH, Inc.
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MAY 1996

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Technical Document to Support No Further Action

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LIST OF ACRONYMS

bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylene
cm/sec	centimeters per second
CRTC	Combat Readiness Training Center
DD	Decision Document
ft	feet
ft ² /day	square feet per day
HMTC	Hazardous Materials Technical Center
IRP	Installation Restoration Program
m ² /day	square meters per day
MDEQ	Michigan Department of Environmental Quality
MDNR	Michigan Department of Natural Resources
NOAA	National Oceanic and Atmospheric Administration
PA	Preliminary Assessment
PP	Priority Pollutant
ppm	parts per million
SI	Site Investigation
SOV	soil organic vapor
SVOC	semivolatile organic compound
TPH	total petroleum hydrocarbons
UST	underground storage tank
VOC	volatile organic compound

1.0 INTRODUCTION

This Decision Document (DD) supports the no further action alternative for Site 14 - Underground Storage Tank (UST) by the Fire Station at the Alpena Combat Readiness Training Center (CRTC) in Alpena, Michigan. The purpose of the DD is to summarize the existing data for the site and to describe the Air National Guard's rationale for selecting the no further action alternative. The objectives of the DD for Site 14 are:

- To briefly describe the location, history, and environmental setting of the Alpena CRTC, Site 14
- To summarize the results from previous Installation Restoration Program (IRP) investigations
- To describe the current status of the site based on the Abbreviated Site Investigation (SI) Report dated November 1993
- To assess the risk to human health and the environment.

Data resulting from the following activities were used to derive and support the no further action alternative for Site 14: Preliminary Assessment (PA) by the Hazardous Materials Technical Center (HMTTC) (1985), and the Abbreviated SI by The Earth Technology Corporation (1993).

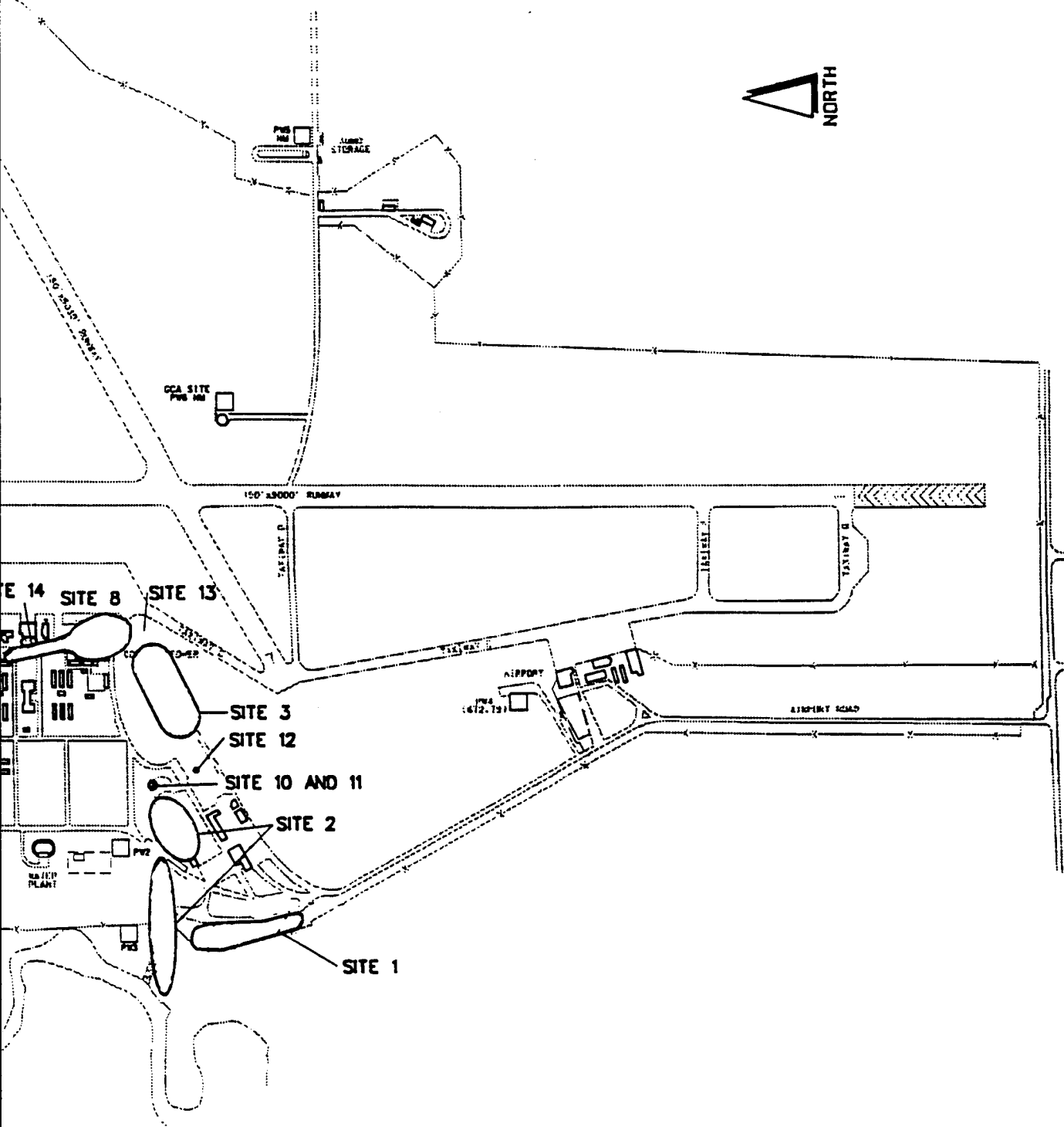
1.1 SITE LOCATION AND DESCRIPTION

Site 14 is located on the west side of the CRTC near the runway apron as shown on Figure 1-1. The 15,000-gallon fuel oil UST was located on the west side of the Fire Station, Building 28 (see Figure 1-2). West of the site is 1st Street. The site measures approximately 30 square ft and is grass-covered.

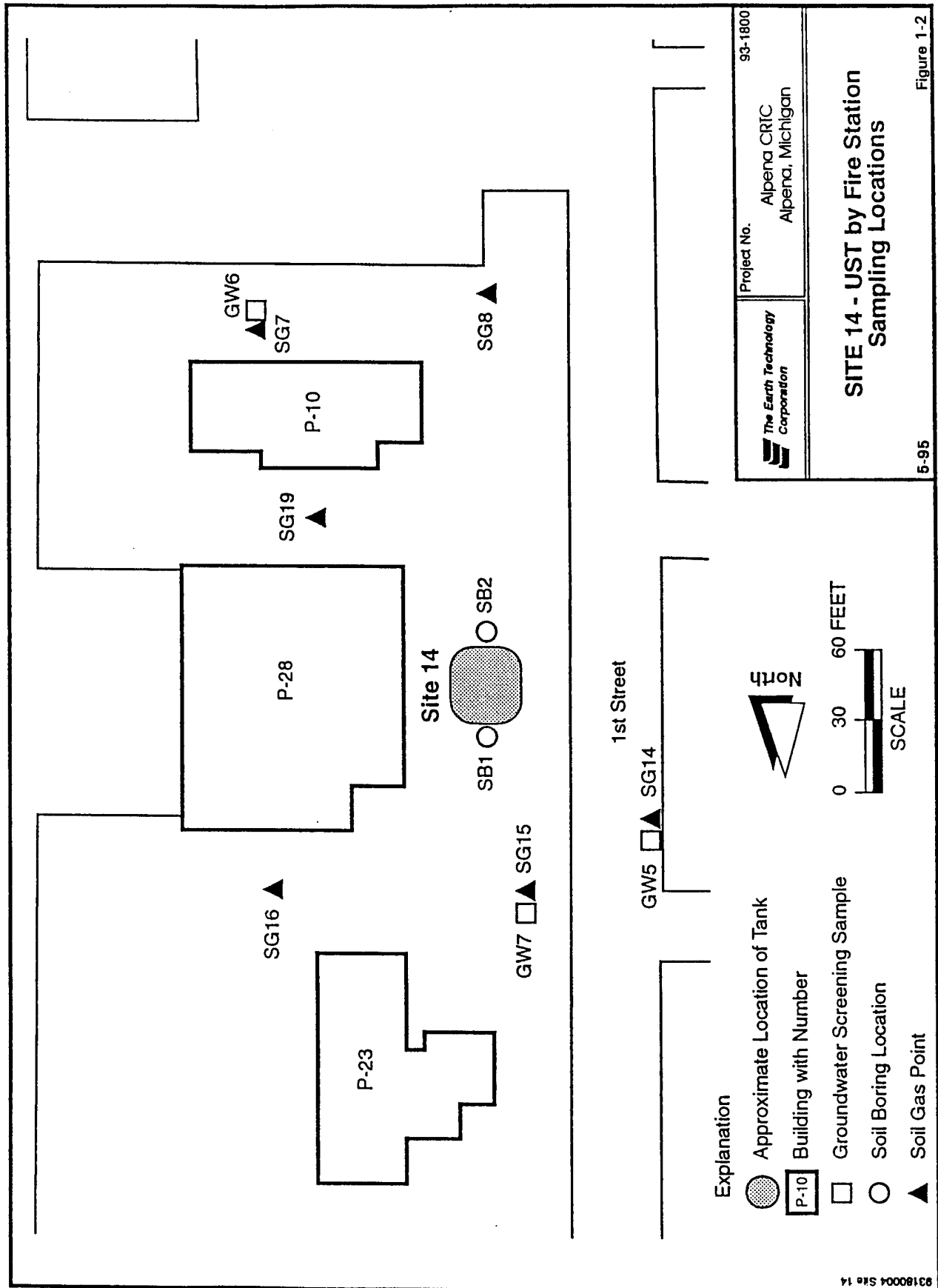
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LAKE WINTAN

LAKE WINTAH



	PROJECT NO. MIANG 928901 Alpena CRTC Alpena, Michigan
DRAFT 11-95	LOCATIONS OF IRP SITES Figure 1-1



Adjacent Land Uses

The Alpena CRTC is surrounded by land used primarily for farming, forestry, and tourism. The Alpena County Regional Airport is immediately adjacent to the base, as they share use of approximately 1,755 acres. The area surrounding the site is developed with roads, buildings, and lawns.

Nearby Population

The Alpena CRTC is located in a rural area with both low population density and growth rates. The nearest residence to this site is located over 2 miles from the base. Approximately 75 full-time employees are located on-base. There is no permanent housing. During the months of April through September, training sessions are held. These sessions last for 2 weeks during which time personnel are housed on-base.

The base is surrounded by forest, wetlands, and rivers. A considerable number of wildlife species are observed on-base. The U.S. Fish and Wildlife Service and the Michigan Department of Natural Resources (MDNR) [currently the Michigan Department of Environmental Quality (MDEQ)] have reported that no threatened or endangered species reside within the boundaries of the CRTC (MDNR, 1994) (U.S. Fish and Wildlife Service, 1994). There are no wetlands within, or adjacent to, the site boundaries.

Surface Water and Groundwater Resources

The Alpena CRTC is located within the Northwestern Lake Huron Water-Resources Subregion (Miller and Twenter, 1986). The southern shore of Lake Winyah, formed by a hydroelectric dam on the Thunder Bay River, borders the base on the north. The south branch of the Thunder Bay River borders the base on the west. From Lake Winyah, the Thunder Bay River flows southeast toward Lake Besser and on to Lake Huron. The water ways in the vicinity of the facility are primarily used for recreational purposes and as a water source. The city of Alpena gets its water supply from Lake Huron. Alpena Township and the CRTC purchase water from the city of Alpena. The water supply intake is located approximately 1.5 miles

southwest of the mouth of the Thunder Bay River, approximately 11 miles downstream from the facility.

The hydrogeologic units of interest on the facility are the lacustrine sand (shallow aquifer), the Traverse Group Limestone, and the grey clay aquitard which locally occurs between the two aquifers. Hydrologically, the base is located in the recharge area of the shallow aquifer. The water table in the surficial aquifer is variable over the base, ranging from approximately 5 ft below ground surface (bgs) to approximately 25 to 30 ft bgs. Groundwater beneath the Site 14 area flows northwest towards a sinkhole located in the north-central portion of the base.

1.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES

History

The 15,000-gallon UST was used to store fuel oil. The tank was installed in 1959 and removed in October 1990. According to the base civil engineer, the soil removed from around the tank during the excavation was noticeably free of hydrocarbons and the tank showed no signs of corrosion. According to prior information, the UST was supposedly buried at a depth of 30 ft. Facility personnel however, indicated the actual depth of the UST was approximately 15 ft bgs. No soil samples were collected for analysis at the time of the tank removal.

Site 14 was identified in the PA conducted by HMTc (1985). PA activities included a detailed review of pertinent installation records and on-site visits which included interviews with past and present employees. The PA stated that no occurrences of tank leakage or fuel spills had occurred. Because Site 14 was considered to pose little or no environmental threat, no Hazard Assessment Rating was performed and no further action was recommended by the PA.

Regulatory Agency/Public Involvement

A DD was submitted in 1991 to the MDNR/MDEQ for Site 14 stating the site exhibited no potential for contaminant migration. As requested by the MDNR/MDEQ in their review of the

Site 14 DD, an Abbreviated SI (November 1993) was conducted to confirm the presence or absence of contamination at Site 14. SI activities included the advancement and sampling of soil borings SB01 and SB02 which were located adjacent to the tank pit (Figure 1-2).

Laboratory analyses conducted for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), priority pollutant (PP) metals, and total petroleum hydrocarbons (TPH) indicated no organic compounds or inorganic analytes present in the soil at concentrations exceeding Act 451, Part 201 generic residential cleanup criteria.

1.3 COMMUNITY PARTICIPATION

There has been no community involvement in the IRP investigation conducted at Site 14 (UST by Fire Station) at the CRTC, Alpena, Michigan.

2.0 CURRENT SITE STATUS

The following summary of site characteristics includes a description of the environmental setting as well as the results of any sampling performed at the site.

2.1 PHYSIOGRAPHY AND CLIMATOLOGY

The Alpena CRTC is located in an area created by glacial activity, sinkhole (karst) development, and human activities. Glacial activity has resulted in the deposition of lake deposits consisting of sand and clay on a relatively flat surface. A large sinkhole, located north of Site 14, is a significant feature affecting the hydrology of the base (Figure 1-1). The general land surface elevations on base vary between a low of 672 ft above mean sea level to a high of 688 ft above mean sea level.

The climate is characterized as semi-maritime and is affected by the proximity of Lake Huron to the east, which modifies most weather extremes. Summers are warm and sunny while winters are cloudy and snow is common. The precipitation in the area is evenly distributed throughout the year. The mean annual precipitation for the 29-year period beginning in 1957 is 29.15 in. [National Oceanic and Atmospheric Administration (NOAA), 1987]. The estimated mean annual lake evaporation rate for the area is 26 in. (NOAA, 1983). Net annual precipitation is estimated at 3 in. for the time period of 1957 to 1986. The 1-year 24-hour rainfall event for the area is estimated to be 1.75 in. (NOAA, 1963).

2.2 GEOLOGY AND SOIL

The Alpena CRTC is located in the outcrop area of the lacustrine sand of northeast Michigan. The lacustrine sand is composed of quartz sand, pebbles, cobbles of limestone and rock fragments, and some lenses of reddish-brown clay. This unit varies in thickness from approximately 20 ft at the north end of the base near Lake Winyah, to approximately 60 ft

at the southern end of the base. The lacustrine sand is underlain by the Devonian ages Traverse Group Limestone, which is described as a grey fossiliferous limestone, containing some chert (Black, 1983). In some locations this lacustrine sand directly overlies the limestone aquifer and in other locations is separated from the limestone aquifer by a grey clay aquitard.

Two soil samples were collected at Site 14, one from each end of the former storage tank location and at the depth where the UST was buried, in accordance with MDNR/MDEQ criteria. Soil sample SB01 was collected and logged from 15 to 17 ft bgs. Soil sample SB02 was collected and logged from 14 to 16 ft bgs. The UST was reportedly buried at a depth of approximately 15 feet. All the soil samples were field-screened using a photoionization detector. The material encountered in soil borings SB01 and SB02 consisted of a medium-grained sand with some silt, which appeared to be fill material.

Laboratory analytical results completed on the two soil samples found no VOCs, SVOCs, or PP metals present in concentrations above Act 451, Part 201 generic residential cleanup criteria (see Table 2-1). TPH was detected in the 15 to 17 ft sample obtained from SB01 at 26.4 ppm and in the 14 to 16 ft bgs sample obtained from SB02 at 21.1 ppm. No Act 451, Part 201 generic residential cleanup criteria exists for TPH.

Additional supporting data were acquired during the remedial investigation field activities completed at Site 8, which surrounds Site 14. Six soil organic vapor (SOV) screening samples were collected near Site 14 as shown on Figure 1-2. No benzene, toluene, ethylbenzene, and xylene (BTEX), chlorinated hydrocarbons, or JP-4 (total volatile concentration) were detected in the SOV or groundwater samples (see Tables A-1 and A-2 in Appendix A).

2.3 HYDROGEOLOGY

Beneath the Alpena CRTC, groundwater occurs in both the lacustrine sand and limestone aquifers. A feature unique to the installation is the development of a large sinkhole in the north-central portion of the CRTC. Groundwater flow in the lacustrine aquifer generally moves

**Table 2-1 Data Summary Table: Soils Site 14 - UST by Fire Station
MIANG, Alpena CRTC, Alpena, Michigan**

Sample Number:	P14B011517	P14B021416	
Site:	PC-14	PC-14	
Locator:	SB01	SB02	
Depth (ft):	15 to 17	14 to 16	
Date Sampled:	Nov-11-92	Nov-11-92	
Laboratory:	CompuChem	CompuChem	MDEQ Cleanup
Associated QC Samples:	EB-1, P-TB1, FB1, FB2	EB-1, P-TB1, FB1, FB2	Criteria**
Method: 418.1, mg/kg			
Total Petroleum Hydrocarbons	26.4	21.1	None
Method: 8010, ug/kg			
Chloroform	.15 J	1.2 U	2000
Methylene Chloride	2.2 J	3.6 U	100
Method: 8020, ug/kg			
1,2-Dichlorobenzene	0.94 J	.082 B	12000
1,3/1,4-Dimethylbenzene	3.8 U	.098 J	5600
1,4-Dichlorobenzene	1.1 B	.72 J	1500
Benzene	1.7 U	.058 J	100
Ethylbenzene	2.1 U	.076 J	1500
Method SW 846, mg/kg			
Arsenic	.59 []	.58 []	5.8
Chromium	2.3	2.2	18
Chromium(3)	0.347	0.371	2
Lead	.93	1.3	21
Total Chromium	0.347	0.371	

Note: Chromium(3), Chromium(6), and Total Chromium were calculated from extract concentrations. No Chromium(6) was detected.

** Act 451, Part 201 generic residential cleanup criteria. Cleanup criteria for metals are acceptable default values. U - Not detected. Value listed in detection limit.

B - Not detected. Compound found in blank samples.

[] - Concentration is between the Practical Quantitation Limit and the Instrument Detection Limit.

J - Concentration is estimated.

toward the sinkhole, although groundwater flows towards the Thunder Bay River in places on the installation. Groundwater flow direction within the limestone aquifer is unknown. Hydraulic characteristics vary greatly across the base. The hydraulic conductivity in the Site 14 area varies from 6.67×10^{-2} to 4.16×10^{-1} cm/sec. The transmissivity varies across the base from an average low of 11 m²/day (118 ft²/day) to an average high of 579 m²/day (6,237 ft²/day).

Three groundwater screening samples were collected around Site 14 as part of the Site 8 investigation (Figure 1-2). The samples were analyzed for BTEX, chlorinated hydrocarbons, and total volatiles (JP-4) (see Tables A-1 and A-2 in Appendix A). Groundwater was encountered at approximately 14 to 20 ft bgs. No total volatiles or BTEX concentrations were detected in these samples above the method detection limits. No confirmational groundwater sampling was conducted at Site 14 because the focus of the Abbreviated SI was to confirm the absence or presence of contaminants in the soil. Had the soil gas and groundwater screening or soil confirmational sampling activities indicated significant levels of hydrocarbons indicative of contamination by a UST, further site investigation would have been recommended.

2.4 SURFACE WATER

Few man-made surface drainage ditches or storm drains are located on-base because the majority of the soils have fair to very rapid infiltration rates. One storm drain is located within the motor pool area. A prominent ditch west of the motor pool area drains surface water runoff toward the Thunder Bay River.

Because no surface water bodies are present or adjacent to Site 14, surface water and sediment sampling were not conducted.

2.5 AIR

No air monitoring has been conducted at Site 14 except for field screening. The two soil samples collected from SB01 and SB02 were scanned with a photoionization meter for VOC concentrations during drilling operations. No VOCs above background concentrations were detected during air monitoring.

2.6 RECEPTORS

Because a potential contamination source has not been identified, it was not necessary to identify potential receptors.

3.0 RISK ASSESSMENT

The only contaminant detected in Site 14 soils was TPH at a concentration of 26.4 ppm in soil boring SB01. No Act 451, Part 201 generic residential cleanup criteria for TPH has been established. The soil gas and groundwater screening samples collected from locations adjacent to Site 14 did not detect any hydrocarbons. There is little evidence that either human health or the environment are at risk from Site 14 conditions. Therefore, no risk assessment has been conducted.

4.0 SELECTED ACTION: NO FURTHER ACTION

The risk to human health and the environment from Site 14 is low. The no further action alternative is proposed on the basis that no evidence exists to suggest the groundwater, surface water, soil, or air are sufficiently contaminated to pose a threat to human health or the environment. Current site conditions and environmental testing data indicate that no further action is warranted at Site 14.

5.0 DECISION

TECHNICAL DOCUMENT TO SUPPORT NO FURTHER ACTION DECLARATION

SITE NAME AND LOCATION

Installation Restoration Program Site
Site 14 - Underground Storage Tank By the Fire Station
Alpena Combat Readiness Training Center, Alpena, Michigan

STATEMENT OF BASIS

This decision is based on the results of the Installation Restoration Program (IRP) Phase I Records Search and the Phase II Abbreviated Site Investigation studies. The results of these activities are documented in the Abbreviated Site Investigation Report (The Earth Technology Corporation, November 1993).

DESCRIPTION OF THE SELECTED REMEDY

Based on the current conditions at IRP Site 14, it has been determined that no significant risk or threat to public health or the environment exists. Therefore, no further action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, is required.

DECLARATION

This Decision Document represents the selected action for this site developed in accordance with CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986, and the National Contingency Plan. It also satisfies the requirements of the National Environmental Policy Act that apply to CERCLA response actions. It has been determined that the selected remedy of no further action is protective of human health and the environment, attains federal and state requirements that are applicable or relevant and appropriate, and is cost effective. The statutory preference for further treatment is not satisfied because further treatment was not found to be necessary. Contaminant levels at the site have been determined to present no significant threat to human health or the environment; thus, no treatment is necessary.


Chief, Environmental Division


Date


State Regulatory Agency Representative


Concur/Nonconcur


Date

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- U.S. Fish and Wildlife Service, 1994. Letter sent to the Alpena Combat Readiness Training Center, dated February 23.

APPENDIX A
Screening Data

**Table A-1 Soil Gas and Groundwater Screening
JP-4 Standard Data**

Soil Gas Sample I.D.	Depth (ft)	JP-4 (ppm)
2SG-11	5	< 20
2SG-12	5	< 20
2SG-13	5	22
2SG-14	5	47
2SG-18	5	< 20
2SG-20	5	26
2SG-27	5	< 20
2SG-28	5	< 20
Groundwater Sample I.D.	Depth (ft)	JP-4 (ppb)
2GW-3	8-11	22
2GW-8	8-11	< 22
2GW-10	8-11	< 22

Source: EnviroSurv, Inc. Screening Results; Final Abbreviated Site Investigation Report, Alpena Readiness Training Center, Alpena County Regional Airport, Michigan Air National Guard, Alpena, Michigan, November 1993.

**Table A-2 Soil Gas and Groundwater Screening
Target VOC Data (ppm)**

Soil Gas Sample No.	1,1-DCE	t-1,2-DCE	c-1,2-DCE	1,1,1-TCA	TCE	PCE	Benzene	Toluene	Ethylbenzene	Total Xylenes
2SG-11-5	<0.5	<0.5	<1.0	<0.05	<0.05	<0.05	<5.0	<5.0	<5.0	<5.0
2SG-12-5	<0.5	<0.5	<1.0	<0.05	<0.05	<0.05	<5.0	<5.0	<5.0	<5.0
2SG-13-5	<0.5	<0.5	<1.0	<0.05	<0.05	<0.05	<5.0	<5.0	<5.0	<5.0
2SG-14-5	<0.5	<0.5	<1.0	<0.05	<0.05	<0.05	<5.0	<5.0	<5.0	<5.0
2SG-18-5	<0.5	<0.5	<1.0	<0.05	<0.05	<0.05	<5.0	<5.0	<5.0	<5.0
2SG-20-5	<0.5	<0.5	<1.0	<0.05	<0.05	<0.05	<5.0	<5.0	<5.0	<5.0
2SG-27-5	<0.5	<0.5	<1.0	<0.05	<0.05	<0.05	<5.0	<5.0	<5.0	<5.0
2SG-28-5	<0.5	<0.5	<1.0	trace	trace	0.21	<5.0	<5.0	<5.0	<5.0
Groundwater Sample No.										
2GW-3-8-11	<0.5	<0.5	<1.0	<0.05	<0.05	<0.05	<5.0	<5.0	<5.0	<5.0
2GW-8-8-11	<0.5	<0.5	<1.0	<0.05	<0.05	<0.05	<5.0	<5.0	<5.0	<5.0
2GW-10-8-11	<0.5	<0.5	<1.0	<0.05	<0.05	<0.05	<5.0	<5.0	<5.0	<5.0

Source: EnviroSurv, Inc. Screening Results; Final Abbreviated Site Investigation Report, Alpena Readiness Training Center, Alpena County Regional Airport, Michigan Air National Guard, Alpena, Michigan, November 1993.